

THE CLAWLESS AND APPARENTLY CLAWLESS CURCULIONIDAE
OF AUSTRALIA.

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(Contribution from the South Australian Museum.)

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A singular feature that occurs in several genera of several subfamilies of Australian Curculionidae, is the absence, or apparent absence, of the claw joint, so that each tarsus consists of but three joints, with the third wider than the others, its apex completely rounded, and the fourth joint truly absent; or the tip of the third may be slightly notched at the apex, and with or without a rudiment of the fourth joint in it.

The apparent or real absence of the claw joint is often accompanied by the loss of a joint in the funicle, this being six-jointed instead of seven, or even (*Anarciarthrum*) five-jointed. Other genera of weevils, however, have less than seven joints in the funicle but with normal tarsi; *Cionus* five-jointed, many *Cossonides* with five or six joints, or even (*Dryophthorus*) four.

Of the genera, *Misophrice*, *Anarciarthrum*, and *Micraonychus* occur on plants of the genus *Casuarina* (shedaks and bullocks), *Syarbis*, *Aolles*, *Zeopus*, *Atelicus*, and *Thechia* on species of *Eucalyptus* (gum trees), and *Aonychus* on species of *Hakea* (needle-bushes) and *Atriplex* (salt-bushes). *Geochus* occurs under fallen leaves.

The previously described species are as follows:—

GONIPTERIDES.

SYARBIS, Pasc. (*Acroteriasis*, Roel.).

ALBIVITTIS, Lea	PLUMBEUS, Lea
ALCYONE, Lea	NUBILUS, Roel.
DEYROLLEI, Roel.	<i>brevicornis</i> , Lea
EMARGINATUS, Roel.	PACHYPUS, Pasc.
EUCALYPTI, Lea	PORCATUS, Lea
FASCICULATISSIMUS, Lea	POSTHUMERALIS, Lea
GONIPTEROIDES, Pasc.	PULCHELLUS, Lea
GOUDIEI, Lea	PULCHRIPENNIS, Lea
HAAGI, Roel.	PUNCTIPENNIS, Roel.
<i>plumbeus</i> , Lea	SCIURUS, Pasc.
<i>sciurus</i> , Pasc., var.	SEMILINEATUS, Pasc.
NERVOSUS, Pasc.	SIMULANS, Lea
NIGER, Roel.	SUBNITIDUS, Roel.

DIABATHRARIIDES.

ATELICUS, Waterh.

ABRUPTUS, Pasc.	GUTTATUS, Pasc.
ATROPIIUS, Pasc.	INAEQUALIS, Waterh.
CRASSIPES, Pasc.	MINIATUS, Pasc.
FERRUGINEUS, Waterh.	VARIABILIS, Lea

ERIRHINIDES.

MISOPHRICE, Pasc.

ALTERNATA, Lea	MINIMA, Lea
AMPLICOLLIS, Lea, vars. A, B, C	MUNDA, Blackb.
AMPLIPENNIS, Lea	NIGRICEPS, Lea
APIONOIDES, Lea	NIGRIPES, Lea, vars. A, B, C
ARGENTATA, Blackb.	NIGRIVENTRIS, Lea
ARIDA, Lca	OBLONGA, Blackb.
BLACKBURNI, Lea	ORTHORRHINA, Lea
BREVISETOSA, Lea	PARALLELA, Lea
CARTERI, Lea	QUADRATICOLLIS, Blackb.
CLATHRATA, Lea	RUFIVENTRIS, Lea
CRISTATIFRONS, Lea	SETOSA, Lea
CYLINDRICA, Lea	SETULOSA, Blackb.
DISPAR, Blackb.	SOROR, Lea
DISSIDENTANEA, Lea	SPILOTA, Blackb.
DUBIA, Lea	SQUAMIBUNDA, Lea
EVANIDA, Lea	SQUAMIVENTRIS, Lea, vars. A, B
FENESTRATA, Lea	SQUAMOSA, Blackb.
GLORIOSA, Lea, vars. A, B, C, D, E, F	SUBMETALLICA, Blackb.
GRIFFITHI, Lea	TUBERCULATA, Lea
HISPIDA, Pasc.	V-ALBA, Lea
HOBLERI, Lea	VARIABILIS, Blackb.
INCONSTANS, Lea	VICINA, Lea
INFLATA, Lca	VIRIDISQUAMA, Lea
INSULARIS, Lea	VITIATA, Lca

ANARCIARTHURUM, Blackb.

VIRIDE, Blackb.

THECHIA, Pasc.

ALTERNATA, Lea (? <i>Cenchrina</i>)	LATIPENNIS, Lea
BIMACULATA, Lca	LONGIROSTRIS, Lea
BREVIROSTRIS, Lea	PYGMAEA, Pasc.
CINERASCENS, Lea	

HAPLONYCIDES.

AOLLES, Pasc.

LONGIROSTRIS, Lea	PUNCTICOLLIS, Lea
MINIMUS, Lea	RUBIGINOSUS, Pasc.
MOESTUS, Lea	TIBIALIS, Lea
NUCEUS, Pasc.	TRIFASCIATUS, Lea
ORBICULATUS, Lea	UNIFORMIS, Lea
ORNATIPENNIS, Blackb.	VARIEGATUS, Lea

ZEOPUS, Pasc.

STOREOIDES, Pasc.

CRYPTORHYNCHIDES.

AONYCHIUS, Schon.

ARGUS, Lea	LUCTUOSUS, Pasc.
HOPEI, Boh.	PACHIYPUS, Pasc.
var. <i>bicruciatu</i> s, Lea	STRIATUS, Lea
LINEATUS, Pasc.	

MICRAONYCHIUS, Lea.

CASUARINAE, Lea
 CINERASCEUS, Lea
 DECIPiens, Lea
 MACULATUS, Lea

NIGRIROSTRIS, Lea
 RUFIMANUS, Lea
 SORDIDUS, Lea

ATELICUS.

In a note on *Strongylorrhinus* Waterhouse⁽¹⁾ comments as follows on two species of *Atelicus*:—"In the total absence of claw joint to the tarsi. Here the large dilated third joint to each tarsus is entire, showing neither the apical notch, nor the groove on the upper surface." In his diagnosis of *Atelicus* he notes "*tarsis triarticulatis . . . articulo tertio fere rotundato.*" In the description of *A. inaequalis* and *A. ferrugineus* the third joint was not mentioned. The former species being the first described is presumably the type of the genus, and was so accepted by Lacordaire, who wrote of its tarsi⁽²⁾ "*3^e article des tarses orbiculaire, le 4^e nul*"; in the figure⁽³⁾ the tarsi are also shown as three-jointed. Lacordaire correctly described the funicle as being composed of six joints with the following one contiguous to the club, in fig. 2*b*, however, it is shown as seven-jointed.

There are before me several specimens from Tasmania that agree so well with the characters noted by Waterhouse, except in the tarsi, that I think they must belong to *A. inaequalis*. A similar specimen from Victoria bears Blackburn's name label "*inaequalis*, Waterh.," and there are others before me from New South Wales. The tarsi at first glance appear to have the third joint entire and to be without a claw joint, but on close examination the third joint on each tarsus is seen to have a thin wedge-shaped notch extending almost half-way to the base, the notch completely occupied by a claw joint, which is covered with similar clothing to that of the adjacent surface; claws, if present, are obscured by the apical fringe.

Specimens identified by Blackburn and myself as *A. ferrugineus* have somewhat similar tarsi, but the clothing of their upper surface being more closely compacted the claw joint is even less distinct, and on some specimens is scarcely indicated on close examination. In fact, the tarsi on all species of the genus appear to be three-jointed, but on close examination a claw joint or remnant of same becomes visible. It is probable, however, that it could not be seen when the tarsi are mealy or greasy.

ATELICUS INAEQUALIS, Waterh., var.

A specimen from Tasmania appears to represent a variety of this species; its elytra, from the base almost to the subapical tubercles, are clothed with uniformly whitish scales, having in some lights a golden gloss; just before the subapical tubercles and on the apical declivity there are patches of chocolate-brown scales. On each elytron the third interstice from near the base to near the subapical tubercles, and the fifth from near the base till it joins the subapical tubercle, are almost evenly elevated instead of with interrupted elevations; the basal projections are slightly more produced than on the typical form, but not quite as strongly elevated.

ATELICUS GUTTATUS, Pasc.

Described from Tasmania and as having "Elytris maculis apicalibus." Ten specimens before me from Tasmania (Launceston and West Tamar), New South

(1) Waterhouse, Trans. Ent. Soc. Lond., 1862, p. 228.

(2) Lacordaire, Gen. des Coleop., vi., p. 408.

(3) Atlas, pl. 70, f. 2, *a, b, c*.

Wales (Galston), and South Australia (Lucindale) may belong to the species, they vary considerably in size (3-6 mm., without the rostrum); each of them has a small narrow spot of white scales on the fifth interstice on each elytron, about the summit of the apical slope; each also has a medio-basal spot on the pronotum, connected with a bisinuate basal strip of similar scales. Of these specimens one has the head and rostrum black, another has the head and part of the rostrum black, and a third has the head only black; all the others have the head and rostrum coloured as the prothorax and elytra. Two other specimens from Tasmania (Georgtown and Launceston), in addition to the subapical spots, have the suture white at the apex; the Launceston specimen has the head and rostrum black.

***Atelicus fusiformis*, n. sp.**

Reddish, antennae somewhat paler than other parts. Closely covered with scales similar to the derm on upper surface, becoming white on under parts.

Rostrum almost parallel-sided, moderately curved, slightly longer than prothorax; with crowded, partially concealed punctures. Prothorax moderately transverse, sides gently rounded and subcontinuous with those of prothorax and elytra; with large punctures. Elytra narrow, parallel-sided to near apex, separately strongly rounded at base, apical slope long and gradual; with regular rows of large punctures. Length (excluding rostrum), 4 mm.

Western Australia: Perth (C. French, sen.). Unique.

A narrow fusiform species with the apical slope more gradual than usual. *A. miniatus*, with similar clothing, is decidedly wider, with outlines much as those of the species here identified as probably *A. guttatus*. The scales on the upper surface so closely resemble the derm that at first sight the latter appears to be glabrous, on close examination they cause it to appear finely granulated or even shagreened.

***Atelicus latericollis*, n. sp.**

Reddish, coxae and clubs blackish. Closely covered with scales similar to the derm on upper surface, but with small white spots; under parts mostly with whitish scales.

Rostrum distinctly curved, slightly longer than prothorax; with coarse, partially concealed punctures. Prothorax strongly transverse, base strongly bisinuate and much wider than apex, sides gently incurved; with coarse and rather dense punctures. Elytra rather thin, almost parallel-sided to near apex; with regular rows of large, deep punctures; apical slope scarcely the length of prothorax. Length, 5 mm.

Tasmania: Cradle Mountain (A. M. Lea). Unique.

There is a small white spot on the fifth interstice on each elytron at the summit of the apical slope, as on the species supposed to be *A. guttatus*, but in addition there are many small white specks scattered about, especially on the sides; from that species, however, as from all others of the genus, it is distinct by the sides of the prothorax being gently incurved, instead of rounded.

MISOPHRICE.

The genus *Misophrice* is one of the most abundantly represented in Australia, and its minute, slow-moving species may confidently be looked for wherever trees or shrubs of the genus *Casuarina*⁽⁴⁾ occur. By its clawless tarsi and six-jointed funicle it may be readily distinguished from all other described Erirhinides. *Anarciarthrum* with the funicle five-jointed is very close to it, and quite possibly some of the species at present standing as *Misophrice* may be found to belong to

(4) I did not, however, find it in Fiji on *C. equisetifolia*, the only species I was able to examine there.

it. *Thechia* with the funicle seven-jointed has a somewhat different appearance, and the species occur on *Eucalypti*. The species of *Micraonychus* also have clawless tarsi, are to be taken on *Casuarinae*, and at first glance appear to belong to *Misophrice*, but as they have a well-defined pectoral canal, the genus was referred to the Cryptorhynchides. Two tables of the genus were given by Blackburn⁽⁵⁾ and myself⁽⁶⁾ each dealing with comparatively few species; with over fifty now known, and many of them variable, I am unable to prepare a satisfactory table, but the following division of the species into groups should simplify the task of identifying them:—

Group 1. Elytra tuberculate.
tuberculata, Lea.

Group 2. Elytra with numerous erect bristles.
alternata, Lea; *argentata*, Blackb.; *hispida*, Pasc.; *hobleri*, Lea;
setosa, Lea.

Group 3. Derm of elytra entirely concealed by clothing.
cratistifrons, Lea; *orthorrhina*, Lea; *squamibunda*, Lea; *squamiventris*, Lea.

Group 4. Derm of elytra entirely black.
arida, Lea; *gloriosa*, Lea; *griffithi*, Lea; *insularis*, Lea; *parallela*,
Blackb.; *soror*, Lea; *viridisquama*, Lea.

Group 5. Derm of elytra with isolated dark spots or vittae.
amplipennis, Lea; *apionoides*, Lea; *blackburni*, Lea; *carteri*, Lea;
inflata, Lea; *rufiventris*, Lea; *spilota*, Blackb.; *vicina*, Lea;
vitiata, Lea.

Group 6. Derm of elytra at most with base and suture dark.
amplipennis, Lea; *brevisetosa*, Lea; *clathrata*, Lea; *cylindrica*, Lea;
dispar, Blackb.; *dissentanea*, Lea; *dubia*, Lea; *evanida*, Lea;
fenestrata, Lea; *inconstans*, Lea; *minima*, Lea; *munda*, Blackb.;
nigriceps, Lea; *nigripes*, Lea; *nigriventris*, Lea; *oblonga*,
Blackb.; *setulosa*, Blackb.; *submetallica*, Blackb.; *V-alba*, Lea.

Notes on above Groups.

amplipennis, Lea. An occasional specimen has the derm of the elytra almost black.

gloriosa, Lea. Some specimens might be regarded as belonging to Group 2.
quadraticollis, Blackb. Unknown to me, by the description it evidently belongs to Group 6.

squamiventris, Lea. On some specimens there are a few erect setae on the apical half of the elytra.

squamosa, Blackb. Described as piceo-nigra, so evidently belongs to Group 4.

variabilis, Blackb. Very variable in size and colour, specimens before me could be referred to Groups 4, 5, and 6.

MISOPHRICE OBLONGA, Blackb., var.

Two specimens from Queensland appear to belong to this species but are unusually small. One, from Bribie Island, is but 1 mm. in length, its prothorax is somewhat infuscated and its scales are without metallic gloss. The other, from Mount Tambourine, is very little longer, its pronotum is normally pale, and most of its scales are bluish.

(5) Blackburn, Proc. Linn. Soc. N.S. Wales, 1890, p. 354.

(6) Lea, Trans. Roy. Soc. S. Austr., 1899, p. 159.

MISOPHRICE SOROR, Lea, var.

Three specimens from Bribie Island are distinctly smaller (1 mm.) than usual.

MISOPHRICE GLORIOSA, Lea, var. G.

Four specimens from the Upper Williams River (New South Wales) appear to represent another variety of this species; on three of them the sutural clothing is denser than on the rest of the elytra, but is not quite continuous to the base, and on the rest of the elytra it is bluish. On the fourth specimen it is dense on the suture to the extreme base, but on the rest of the elytra is more or less golden; on all four of them the prothorax is non-vittate, but it has numerous black specks owing to the exposure of the derm.

Misophrice ursa, n. sp.

♂. Brownish-red, tarsi darker. Densely squamose and setose.

Rostrum slightly shorter than prothorax, moderately curved, with fine ridges alternated with rows of punctures almost to apex, but concealed on basal half. Prothorax slightly longer than the apical width and slightly shorter than the basal, sides moderately rounded; with dense and rather coarse, concealed punctures. Elytra oblong-cordate, not much wider than prothorax; with rows of large, subquadrate punctures, appearing much smaller through clothing. Legs stout. Length, 2.5-3.0 mm.

South Australia: Ooldea and Tarcoola (A. M. Lea). Western Australia: Kalgoorlie (W. du Boulay).

A fairly large, densely squamose species, with stout, erect setae, and so belonging to Group 2. The general outlines are much as on *M. squamibunda*, but the clothing is different; on an occasional specimen of that species, however, there are a few setae on the apical slope of the elytra. The clothing is so dense that (except on the apical half of the rostrum) it is only where abrasion has taken place that the derm becomes visible. On the upper surface the scales are mostly of a pale rusty-red, with more or less conspicuous paler and darker spots; on the under parts they are paler (almost white on some specimens). On the elytra the suture is pale throughout, and there are whitish spots or short vittae forming a postmedian series on the even interstices, immediately before and behind those on the second and fourth there are darker spots; the clothing on the basal third of the fifth interstice is whitish, and it is mostly whitish on the apical slope. On most parts the scales are evenly placed, but on the elytra they are so placed that two or more converge to form angles or minute arrow-heads; although dense the scales are so large that the arrangement is quite evident. On several specimens two ill-defined vittae are traceable on the pronotum. The setae are stiff, erect, and numerous, but irregularly distributed, they are absent from the white spots or vittae on the elytra, are fairly numerous at the apex of prothorax, between the eyes, and on the legs; on the elytra, viewed from behind, they appear to form six small fascicles across the middle on the even interstices, but from the sides they are seen to be scattered. Three specimens have the tip of an oedeagus protruding, but their abdomen is without a depression. The only specimen from Tarcoola is apparently a female, it differs from the others in having less of the rostrum clothed, and the apical segment of abdomen with a shallow depression.

Misophrice vittata, n. sp.

Densely clothed with rusty-brown scales with conspicuous whitish vittae, under surface with silvery-white scales; elytra with very short, depressed setae, less numerous on pronotum.

Rostrum moderately curved, about the length of prothorax; apical half glabrous and with minute punctures. Prothorax almost as long as its greatest width, sides moderately rounded. Elytra with basal half parallel-sided; with rows of large punctures, appearing much smaller through clothing. Apical segment of abdomen with a semi-circular apical depression. Length, 3 mm.

South Australia: Lucindale (B. A. Feuerheerd, No. 723). Unique.

A conspicuously-marked species allied to *M. squamibunda*. It belongs to Group 3, as the setae on the upper surface are so short and slope at such a slight degree from the horizontal that they are inconspicuous, even from the sides. The derm is almost everywhere concealed, but where a slight amount of abrasion has taken place, it is seen to be of a dingy red, as is the apical half of the rostrum. The pale scales on the upper surface form a conspicuous median vitta on the pronotum, and an interrupted one on each side; on the elytra they clothe the median third of the suture, the basal third of the second and third interstices, the median fifth of the fifth, the median three-fifths of the seventh, the postmedian portion of the eighth, and most of the ninth and tenth; the postmedian portion of the third is also paler than the adjacent parts; the scales surrounding the eyes are also conspicuously pale. There are two feeble crests between the eyes. The type is probably a female.

***Misophrice albolineata*, n. sp.**

Densely clothed with variegated scales, becoming uniformly pale, but scarcely white, on under parts. With numerous short, subdepressed, inconspicuous setae.

Rostrum about the length of prothorax, moderately curved; apical half shining and punctate, basal half with rows of concealed punctures. Prothorax almost as long as the greatest width, sides strongly rounded, punctures normally concealed. Elytra oblong-cordate, distinctly wider than prothorax; seriate punctures probably large, but appearing small through clothing. Length, 2.5-2.75 mm.

Queensland: Mount Tambourine, in January (A. M. Lea).

A beautiful species of Group 3, with sharply contrasted markings on the elytra; it is allied to *M. orthorrhina*, but the rostrum is decidedly longer and moderately curved; on *M. squamiventris* the rostrum is distinctly longer and thinner. On the upper surface most of the scales are of a pale-fawn colour; on the pronotum there is a conspicuous dark median vitta; on each elytron there are silvery-white vittae occupying the median half of the third, fifth, and seventh interstices (on the type interrupted on the fifth and seventh), the adjacent scales being mostly black, but with small whitish spots. The elytral setae are distinct only from the sides. The legs, rostrum, antennae, and the normally concealed base of head are more or less reddish, but elsewhere the derm is completely concealed. The two specimens obtained are probably females, as the only depression on the abdomen is a slight apical one.

***Misophrice lata*, n. sp.**

Dark reddish-brown, rostrum and legs somewhat paler, antennae still paler. Densely clothed with pale ochreous-grey scales, somewhat variegated on upper surface, becoming uniformly pale on under parts. With numerous short, subdepressed, dark setae, distinct only from the sides.

Rostrum about the length of prothorax, moderately curved; with fine ridges alternated with rows of punctures almost to apex, but concealed on basal fourth. Prothorax distinctly transverse, base about one-fourth wider than apex, sides moderately rounded; punctures crowded but normally concealed. Elytra rather wide, oblong-cordate; seriate punctures appearing small through clothing, but probably of large size. Length, 3.25 mm.

Queensland: Dalby (Mrs. F. H. Hobler). Unique.

Belongs to Group 3, and is one of the largest of the species without erect setae; the elytral markings are somewhat as on *M. V-alba*, but the elytra themselves are decidedly wider in proportion, and the rostrum and legs are shorter. On the middle of each elytron, narrowed to the suture, there is a large sub-triangular space, on which the scales are mostly whitish, but they are not very sharply contrasted with the adjacent ones, and appear more as mottlings than as distinct vittae. The middle of the pronotum has been partly abraded, but from the scales left at the base was apparently clothed with darker scales than on the adjacent parts. As the only depression on the abdomen is a slight apical one the type is probably a female.

***Misophrice grisea*, n. sp.**

Black, rostrum and legs obscurely reddish, scape paler. Densely clothed with pale-greyish scales mixed with a few darker ones, and becoming paler on under parts.

Rostrum about one-fourth longer than the prothorax, rather thin and moderately curved; with rows of punctures almost to apex, but concealed on basal fifth. Prothorax distinctly transverse, sides moderately rounded, apex about one-fourth narrower than base. Elytra oblong-cordate; with rows of large, partially concealed punctures.

South Australia: Mount Lofty Range (N. B. Tindale). Unique.

A rather wide species of Group 4, larger and with different clothing from all other members of that group. The clothing of the elytra consists of true scales, without an admixture of setae, even as viewed from the sides; they are mostly in double (in places treble) rows on the interstices, but are sparser on the first, second, fourth, and sixth than on the others; on the sides of both the upper and under surfaces they have a faint bluish or greenish gloss. On the elytra most of the odd interstices are wider than the even ones. As the only depression on the abdomen is a small one at the apex the type is probably a female.

***Misophrice subvariabilis*, n. sp.**

♂. Black; part of abdomen, of legs, and of antennae obscurely reddish. Moderately clothed with thin whitish scales or depressed setae, becoming green on under parts, but absent from rostrum (except close to base), and from parts of the two basal segments of abdomen.

Rostrum about the length of prothorax, thin, evenly curved and shining; with a row of distinct punctures on each side of base, becoming feeble in front. Prothorax small, moderately transverse, sides strongly rounded in front; with crowded punctures only partially concealed. Elytra large, slightly dilated to beyond the middle; with regular rows of large punctures. Two basal segments of abdomen with a wide shallow median depression, with distinct punctures, and traversed by many fine striae. Length, 2.2-2.75 mm.

♀. Differs in having the rostrum distinctly longer than the prothorax, thinner and with less distinct punctures; abdomen rather strongly convex, with the depression on the two basal segments greatly reduced in size and with a small apical one, more evenly (although not densely) clothed, and with the punctures and striae less evident.

South Australia: Ooldea, Barton, Tarcoola (A. M. Lea).

Var. A. Elytra reddish except for the base suture and a spot on each side which are blackish, or at least infuscated, legs more reddish than on typical form and portion of rostrum more or less distinctly reddish.

Specimens of this variety are mostly but not entirely females.

Var. B. As variety A, except that the elytral spots are changed to vittae, and are continuous almost to base and apex.

Specimens of this variety vary considerably in intensity of colour, and there are many connecting ones between the typical dark form and variety A. About half of them are males.

Var. C. As variety A, except that the elytra are without isolated dark spots.

One male and two females are before me; but some specimens of variety A have the spots so faint that they might almost be referred to this variety.

Of the 187 specimens of this species before me about half have the elytra entirely dark, or so dark that the spots or vittae are scarcely indicated. Comparing them with long series of *M. variabilis* the following differences are apparent: Average size smaller, average colour darker, prothorax always black, rostrum slightly shorter and thinner (sex for sex), spotted specimens more numerous than vittate ones. The clothing of the upper surface appears to be always white, but on the under parts is sometimes bluish or greenish. Most of the specimens with black elytra are males, most of those with partly red elytra are females, but the sexes cannot be distinguished by the colour alone; although each sex has a depression on the two basal segments of abdomen, that of the male is considerably larger (but not deeper) and conspicuously glabrous. Typical specimens may be distinguished from *M. arida*, *parallela*, and *soror*, by their larger size and partly red legs, and from the others of Group 4 by the clothing more like depressed setae than true scales. Those of varieties A and B from *M. carteri* and *rufiventris* by the positions of the spots or vittae, and from the others of Group 5 by the entirely black prothorax.

MISOPHRICE DISPAR, Blackb.

Numerous specimens beaten from a species of *Casuarina* growing beside a river at Paipa (near Noumea) agree perfectly with specimens of this species from Queensland, New South Wales, Victoria, and South Australia.

Misophrice obliquialba, n. sp.

♂. Black; elytra (except base, sides, and suture), abdomen, legs (except tarsi), and antennae (except club), reddish. Rather sparsely clothed with whitish scales, but with a conspicuous white oblique vitta on each side of mesosternum, and another on each side of apex of prosternum.

Rostrum evenly curved, about the length of prothorax; with rows of punctures and glabrous except at extreme base. Prothorax slightly shorter than the greatest width, sides strongly rounded in front; with numerous sharply defined punctures. Elytra distinctly wider than prothorax, slightly dilated to beyond the middle; with regular rows of large punctures. Length, 1.75 mm.

New Caledonia: Paipa, near Noumea (A. M. Lea).

A small species of Group 6. The oblique white lines are very conspicuous; somewhat similar lines are faintly indicated on the Australian *M. nigripes*, but on that species the legs are entirely dark. The species is about the size of *M. dispar*, but more parts are black.

Two specimens that are probably females of the species differ in being slightly larger, in having most of the scales green (variation in colour of scales is a common feature in Australian species of the genus), the tarsi infuscated instead of black, and the rostrum longer and more curved. Another specimen probably also belongs to the species, but its prothorax is somewhat reddish, less of the elytra dark, and rostrum no darker than the femora and tibiae. Each of the three specimens has the oblique white lines of the typical form, but they are less sharply contrasted, owing to the density and colour of the adjacent scales.

Misophrice sordida, n. sp.

Black; elytra, except base and suture, rostrum and abdomen, obscurely reddish, legs and antennae, except club, somewhat paler. Sparsely clothed with whitish scales.

Rostrum about the length of prothorax, evenly curved; with a distinct row of punctures on each side, and glabrous except near base. Prothorax moderately transverse, sides strongly rounded in front; with dense, sharply defined punctures. Elytra oblong-cordate, parallel-sided to beyond the middle; with regular rows of large punctures, becoming smaller posteriorly. Two basal segments of abdomen with a shallow median depression. Length, 1.75-2 mm.

New Caledonia: Paipa (A. M. Lea).

A dingy species of Group 6, about the size of the preceding one, but elytra wider at base and less dilated posteriorly, tarsi no darker than tibiae, and mesosternum without white lines. The type is probably a male, a second specimen is probably a female, it has the rostrum slightly longer, more curved and black, and the abdomen more convex.

Misophrice wardi, n. sp.

Pale castaneo-flavous; head, rostrum (the ends darker than the middle), scutellum, metasternum, club and tarsi more or less deeply infuscated. Densely clothed with whitish scales, in parts with a greenish or coppery gloss.

Rostrum thin, moderately curved, and about one-fourth longer than prothorax. Prothorax slightly transverse, sides rounded and dilated from apex to base, which is conspicuously trilobed; punctures normally concealed. Elytra parallel-sided to beyond the middle, the width of base of prothorax, base deeply trisinate, with regular rows of fairly large punctures. Two basal segments of abdomen with a shallow median depression. Length, 2 mm.

Central Australia, on "desert oak" *Casuarina decaisneana* (C. Barrett).
Unique.

A pale fusiform species with the base of the prothorax conspicuously trilobed and consequently the base of the elytra as deeply trisinate, characters at once distinctive from all other species of the genus. The green scales are most noticeable on the metasternum, but they probably vary in extent; the pronotum has a somewhat speckled appearance; on the elytra the scales are usually in two rows on each interstice. The type appears to be a male.

At Mr. Barrett's request I have pleasure in dedicating this species to Dr. L. Keith Ward, Government Geologist of South Australia, and who, with him, accompanied the recent "Rcso" expedition to Central Australia, and helped to collect some of the insects.

Misophrice barretti, n. sp.

Blackish, some parts obscurely diluted with red, antennae (club excepted) and tarsi paler. Densely clothed with bright-green scales, but a wide median space on the under surface glabrous.

Rostrum thin, rather strongly curved, and much longer than prothorax. Prothorax distinctly transverse, sides moderately rounded; punctures normally concealed. Elytra slightly wider than prothorax at base, sides feebly dilated to beyond the middle; with rows of large partially concealed punctures. Length, 1.50-1.75 mm.

Central Australia, on "desert oak" *Acacia decaisneana* (C. Barrett).

A beautiful species in general appearance strikingly close to *Anarciarthrum viride*, but with the funicle six-jointed. *M. viridisquama* has somewhat similar outlines, but the elytral scales are thinner and not placed in two even rows on each interstice, as on this species. On *M. insularis* the elytra are parallel-sided and the

scales are in single rows. Two specimens were obtained, apparently sexes, as the abdomen of the smaller specimen is less convex than that of the larger one, and its apical segment has a small depression, the elytra are less dilated posteriorly and the rostrum is slightly shorter; it is also obscurely reddish near the tip.

THECHIA CINERASCENS, Lea.

Several specimens of this species are now before me from New South Wales (Newport and Forest Reefs) and Victoria (Warburton, from moss). On the specimen from Forest Reefs the markings are more conspicuous than on the type. On its pronotum there is a narrow pale median line, followed on each side by a broad slaty-brown one, a narrow pale one, then a narrower dark one (invisible from above); on each elytron the suture, sides, and a median vitta are pale, but the pale and dark parts are less sharply limited than on the pronotum. The specimen from Warburton is smaller than the type, and the scales on its upper surface are even less contrasted. The type is a male; the female differs in having the rostrum longer and thinner, clothed only near base, and the two basal segments of abdomen evenly convex, instead of with a shallow median depression.

In the species the scrobes are turned underneath the rostrum and meet at its base, as a result of which, when the antennae are set out, the base of the under surface appears conspicuously notched from the sides; a character that may eventually be considered as of generic importance.

Thechia mollis, n. sp.

♂. Black. Densely clothed with muddy-brown and whitish scales, becoming uniformly white on under parts.

Rostrum moderately thin, gently curved, the length of prothorax; punctures concealed by clothing. Prothorax slightly wider than long, sides gently rounded, but more strongly at apex; punctures crowded but normally concealed. Elytra parallel-sided to beyond the middle and then oblique to apex, which is notched; with rows of large punctures, appearing as feeble striac through clothing. Two basal segments of abdomen large, the first slightly longer than second and as long as three apical ones combined. Length, 2.75-3.0 mm.

Western Australia: Swan River (A. M. Lea).

Structurally close to *T. cinerascens*, but slightly narrower, the rostrum somewhat shorter and stouter, clothed to the apex, and not notched at the base of its lower surface. On the type the clothing on the head and rostrum is almost uniformly dingy-brown, on the pronotum there is a pale median line and the sides are widely pale; on the elytra there are some pale irregular spots on the shoulders, at the basal third, and on and about the suture at the apical third. On a second specimen the clothing of the head and rostrum is much as on the type, but on each elytron the white spots are so numerous that they form a mass from the shoulder to the apical third, where it is deflected to the suture, with a few scattered singly; on its under surface the scales have a faint bluish gloss. As on both specimens the rostrum is clothed throughout, and there is a shallow depression common to the metasternum and two basal segments of abdomen, they are evidently males.

Cratoscelocis, n. g.

Head small. Eyes rather small, elliptic-ovate, lateral, finely faceted. Rostrum rather long and thin but somewhat flattened, almost straight; scrobes deep and oblique, beginning in middle of sides and terminating at lower edge of eyes. Antennae rather short, scape as long as funicle, which is composed of six joints, club briefly ovate. Prothorax transverse, without ocular lobes. Scutellum small. Elytra parallel-sided to near apex, base trisinate. Basal segment

of abdomen large, second and fifth subequal, third and fourth small. Legs short and stout, front coxae almost touching, middle ones moderately separated, the hind ones widely so; femora edentate; tibiae unusually short and stout, tarsi apparently three-jointed. Irregularly squamose.

Apparently belonging to the Erirhinides, and near *Thechia*, but the funicle is six-jointed; *Misophrice* also with it six-jointed has much thinner legs. The tibiae are stout, and from some directions their widest part appears to be close to the base, the front ones are feebly bisinuate on the lower surface, and each is terminated by an obtuse hook, but their sculpture is obscured by the dense clothing; the tarsi appear to be three-jointed, but the third joint is very feebly notched, and under the microscope the remnant of a claw joint becomes visible, it differs slightly in colour from the adjacent part, and does not extend to the apical fringe, claws apparently are not present; from directly behind the front coxae are seen to be slightly separated, but from most points of view they appear to be in contact.

Cratoscelocis foveicollis, n. sp.

Reddish-castaneous. Irregularly clothed.

Rostrum slightly longer than prothorax, punctures concealed on basal half and very fine elsewhere. First joint of funicle stouter than the others, and about as long as the second and third combined, second slightly longer than third, fourth to sixth moderately transverse. Prothorax with extreme base almost twice as wide as the median length, obliquely narrowed to apex, near apex with a continuous narrow impression, traversed by large deep punctures or small foveae (partly obscured by clothing), elsewhere with minute punctures. Elytra not much wider than base of prothorax; with regular rows of large deep punctures, usually slightly wider than the interstices. Length, 1.5-1.75 mm.

New South Wales: Sydney (H. J. Carter), National Park (A. M. Lea).

The head and part of rostrum, all margins and a median line on pronotum, suture, shoulders, and tips of elytra are clothed with greyish-white scales, the rest of the upper surface being glabrous; on the under surface and legs the clothing is denser, with a muddy or paste-like appearance.

A specimen from the Blue Mountains (Dr. E. W. Ferguson) is larger (2.5 mm.), somewhat darker, and with a slightly wider rostrum, but apparently belongs to the same species.

AOLLES.

The tarsi of most species of this genus at first appear to be three-jointed, with the third joint large but slightly notched, on wetting them, however, the notch becomes more distinct and usually a small claw joint, but its claw or claws are usually not very distinct amongst the marginal fringe. On examining the tarsi from below the third joint appears to have a fine median suture, at the extremity of which a claw appears as a somewhat finer seta than the adjoining ones. On several species the claw joints with a single claw are distinct. I think it probable that several of the species referred by Chevrolat to his sixth division of *Haplonyx*, really belong to *Aolles*. On *A. tibialis* two claws to each tarsus may be seen, and it is probable that on other species two claws are so close together that they appear single. It is probable, therefore, that the only valid distinction between *Aolles* and *Haplonyx* is in the antennae. The Australian genera of the subfamily may be thus distinguished:—

Funicle seven-jointed, claw joint distinct.			
Each claw joint with a single claw .. .. .	..	..	<i>Haplonyx</i>
Each with two claws apparently conjoined at base .. .. .	..	..	<i>Sigastus</i>
Funicle six-jointed, claw joint inconspicuous or wanting.			
Rostrum long, thin, and conspicuously curved .. .. .	..	..	<i>Zeopus</i>
Rostrum wider and straight or almost so .. .. .	..	..	<i>Aolles</i>

AOLLES ORNATIPENNIS, Blackb., formerly HAPLONYX.

The claw joint of this species is thin and inconspicuous and the funicle is six-jointed; it is therefore an *Aolles*. It is also, I think, the species named by Chevrolat as *Haplonyx nigrirostris* (an earlier name). A specimen from Arno Bay (South Australia) probably belongs to the species, but has the median fascia interrupted at the suture, and the submedian tooth of the front tibiae more acute and slightly nearer the base than on some cotypes.

AOLLES TIBIALIS, Lea, formerly HAPLONYX.

On examining the tarsi of this species from below each claw joint is seen to be thin and terminated by two small unequal claws; from above the joint and its claws are indistinct, the claws appearing like some of the setae fringing the third joint. The funicle is certainly six-jointed, so the species should stand in *Aolles*, unless a new genus should be considered necessary for it.

AOLLES PUNCTICOLLIS, Lea.

Additional specimens from Bowen, Cairns, and Thursday and Horn Islands are smaller (3-3.25 mm.) than the type, and some of them have the dark humeral patch extended narrowly to the scutellum; on the base of the third interstice on each elytron, of all of them, there is a short vitta of white scales.

AOLLES MINIMUS, Lea, var.

A specimen from Mount Victoria (New South Wales) apparently belongs to this species, but differs from the type and five other specimens in having the head, rostrum, and parts of the legs blackish.

AOLLES UNIFORMIS, Lea.

The type of this species has pale and almost uniformly coloured scales densely plating the derm; but there are now before me numerous specimens from South Australia (Mount Lofty Ranges, Callington, Moonta, and Kangaroo Island), that appear to belong to the species, but differ in having two transverse series of irregular brownish spots or mottlings on the elytra, the sub-basal series sometimes appearing as a rather wide fascia; on other parts of the elytra, and on the pronotum, there are also more or less distinct mottlings. The seriate punctures on the elytra are in very weak striae (as on *A. longirostris*), but the rostrum is decidedly shorter in both sexes than on that species. The white vittae on each side of the scutellum of that species are sometimes faintly indicated, but are usually absent. Two specimens, from Melrose and Lucindale, have almost uniformly pale rusty-brown scales on the upper surface, with feeble pale spots on the elytra, and a few dark scales scattered singly. One from Quorn has the whole of the upper surface mottled. Another, from Murray Bridge, has the head, rostrum, scutellum, abdomen, and parts of the legs black; there are numerous spots of dark scales on its elytra, and the compaction of some of these into the fasciae is rather slight.

AOLLES LONGIROSTRIS, Lea.

The types of this species are females. The male differs in having the rostrum slightly wider, about one-third shorter, and with coarser punctures on the basal half. The clothing about the basal half of the elytra is usually variegated with blackish spots, with a short white vitta on each side of the scutellum. The species occurs in Victoria and South Australia, as well as in Western Australia.

Aolles orbiculatus, Lea.

On typical specimens of this species the elytra are clothed with sooty scales, sharply outlined by a white marginal fringe; but on many specimens there are numerous irregularly distributed whitish scales about the apex, and these become more numerous, till occasionally the scales on the apical half are more than two-thirds white, and there are numerous other white scales towards the base; the white ones, however, never seem to form a median fascia. The rostrum and legs vary from reddish to deep black.

Aolles marmoratus, n. sp.

♂. Reddish-brown; head, scutellum, suture, and most of under surface black or blackish. Moderately clothed with slightly variegated scales, becoming paler on under parts, and very dense on sides of mesosternum and metasternum.

Rostrum broad, straight, and about the length of prothorax; with thin ridges, and coarse, confluent, partially concealed punctures on basal two-thirds, then with smaller but still crowded naked punctures. Prothorax strongly transverse, sides almost evenly oblique to apex, which is about half the width of base. Elytra cordate, outlines subcontinuous with those of prothorax; with rows of large punctures, mostly partly obscured by clothing. Length, 3-4 mm.

♀. Differs in being somewhat larger, rostrum thinner, slightly longer, with shorter ridges and finer punctures (although coarse), which are naked to the base.

South Australia: Lucindale (B. A. Feuerheerdt and F. Secker), Mount Lofty Ranges (S. H. Curnow). Victoria: Portland (H. W. Davey).

The scales on the upper surface are mostly stramineous or pale ochreous, mixed with paler ones where they are densest, as on the sides of the prothorax (which are feebly vittate) and middle of elytra (where there is a feeble fascia); there are also some rounded snowy scales in the striae. Owing to the varying density of the clothing the surface to the naked eye appears somewhat mottled. On several specimens the second and fourth interstices on each elytron, beyond the median fascia, have a vittate appearance, owing to their scales being denser and paler than on the adjacent ones. On one of the many Lucindale specimens the rostrum is entirely dark. The granules on the prothorax and elytra are dense and small, and normally obscured or concealed by the clothing. It is allied to or perhaps a variety of *A. rubiginosus*, but the average size is consistently a little larger, the median fascia is composed of white or whitish scales, and the white scales in the striae are sparser and less conspicuous.

On this and all the following species the femora are stout and strongly dentate and, unlike most species of *Haplonyx*, are without a supplementary tooth in the notch, the front tibiae are short and distinctly bisinuate on the lower surface, or really trisinuate, as there is a short notch between the subapical tooth and the terminal hook, so that the tibiae appear tridentate; the middle and hind tibiae have an apical fringe of black setae, as on most species of *Haplonyx*. Unless otherwise noted the claw joint is inconspicuous, except that at right angles its single claw appears as a median seta not projecting beyond the apical fringe of the claw joint. In all of them the funicle is certainly six-jointed.

Aolles fasciatus, n. sp.

Reddish-brown, some parts black. Densely clothed with variegated scales, the darker ones forming four large spots or two interrupted fasciae on elytra.

Rostrum slightly longer than prothorax, almost straight; with five thin ridges alternated with coarse punctures on basal half, in front with crowded, partially confluent punctures. Prothorax strongly transverse, sides strongly rounded, base more than twice the width of apex. Elytra short, outlines continuous with those

of prothorax; with rows of large punctures, mostly obscured by clothing. Length, 3-3.5 mm.

South Australia: Leigh Creek (Rev. T. Blackburn), Lucindale (F. Secker), Tintinara (J. G. O. Tepper), Murray Bridge (A. M. Lea). Victoria: Sea Lake (J. C. Goudie). New South Wales (Blackburn's collection); Lake Victoria (Capt. S. A. White).

An ovate or briefly elliptic species, somewhat shorter than the preceding one, elytral outlines evenly continuous with those of prothorax, the base more conspicuously trisinate and the darker fasciae due to clothing. From *A. rubiginosus* it is also distinct by the elytral clothing, including the absence of snowy scales from the striae. The clothing is denser than on *A. ornatipennis*. The head and under surface are black on most specimens, but occasionally the abdomen is obscurely reddish; about half of them have the rostrum black, on the others it is more or less reddish. The clothing on the upper surface is mostly rusty-yellow or pale ochreous, often with sooty scales sprinkled on the disc of the pronotum, and white or stramineous ones (sometimes condensed into feeble vittae) on its sides. On the elytra there are large patches of sooty scales, which, near the base, form a rather wide fascia, interrupted near the suture, then there is a pale median fascia beyond which the sooty scales form a very irregular fascia or two large irregular spots. On the under surface and legs the clothing is whitish, becoming slightly ochreous on the sides, and very dense on the mesosternum and metasternum. Some specimens have the rostrum slightly longer and thinner than on others, with the punctures slightly less coarse and the ridges slightly shorter, they are probably females, but the sexual differences are not very pronounced. The prothoracic punctures are normally almost concealed, and also the elytral granules, but the latter are fairly distinct on the dark parts. The specimen from Lake Victoria has only the head black; the scales on its under surface and pronotum are pale stramineous, except that a few sooty ones are on the front of the latter; on the elytra there is a rather broad dark sub-basal band, but beyond it the median fascia and postmedian spots are feeble and irregular.

***Aolles pictus*, n. sp.**

Black; legs, antennae, and parts of upper surface reddish. Densely clothed with rusty-red scales, with conspicuous blackish patches on upper surface, on under surface and legs mostly whitish.

Rostrum slightly longer than prothorax, feebly curved; basal half with fine ridges and series of large punctures, apical half with dense, partially confluent punctures. Prothorax at base more than twice as wide as long; densely granulate punctate. Elytra closely applied to prothorax; with rows of large punctures, interstices with numerous granules, in parts concealed. Length, 3.75 mm.

South Australia: Ooldea (A. M. Lea). Unique.

A beautiful species; the elytra with red basal median and apical fasciae clothed with reddish or ochreous scales, the adjacent parts and the suture black and clothed with blackish scales, the apical fascia, however, is joined to a vitta on each side of the suture, which extends almost to the median fascia, on the right elytron appearing like the letter L. On the pronotum much of the discal clothing is dark, but there is a narrow median line of reddish scales, and the sides are densely clothed with them. It is entirely without the snowy scales in the striae characteristic of *A. rubiginosus*. The general outlines are as in many species of the genus.

***Aolles rufrostris*, n. sp.**

♂. Reddish, under surface usually darker, head black. Moderately clothed with whitish or stramineous scales, with sooty ones on the elytra, forming a wide fascia from near base to near middle, and a large spot on each side of apical half.

Rostrum rather wide, about the length of prothorax; basal two-thirds with five thin ridges, alternated with rows of punctures, apical third with crowded punctures. Prothorax and elytra with outlines, punctures, and granules much as on two preceding species. Length, 3.3-5 mm.

♀. Differs in having the rostrum slightly longer, thinner, and with shorter ridges.

Queensland: Dalby (Mrs. F. H. Hobler).

The clytral clothing is slightly variable, the paler scales are fairly dense on the base, margin the sides, and form a median fascia, connected rather widely along the suture with the apex, the darker scales cover more than half of the surface. To a certain extent the elytral markings are somewhat as on the preceding species, but on that species the sutural scales are dark, without interruption by the fasciae. The rostrum has conspicuous ridges and is red to the base, in sharp contrast with the black head. There are some denticules between the median projection and the subapical tooth of the front tibiae.

***Aolles maculipennis*, n. sp.**

♂. Reddish, head black. Moderately clothed with stramineous scales, on the elytra irregularly mixed with dark ones, middle of pronotum with many dark scales; under surface with whitish scales, becoming stramineous, denser and larger on sides of mesosternum and metasternum.

Rostrum slightly longer than prothorax; with five thin ridges, alternated with rows of coarse punctures on basal two-thirds; on apical third with crowded, partially confluent punctures. Prothorax and elytra with outlines, punctures, and granules as on most species of the genus. Length, 3.5-4.0 mm.

♀. Differs in having the rostrum slightly longer, thinner, and with shorter ridges.

South Australia: Parachilna (E. L. Savage), Leigh Creek, Quorn (Blackburn's collection).

Possibly a variety of *A. orbiculatus*, but consistently larger, and much of the elytra clothed with pale scales, although, except that they are uniformly dense at the base, they are very irregularly distributed, and do not form fasciae; on the apical slope they are quite uniform on several of the interstices on most of the specimens; on several the darker scales are in the majority. On an occasional specimen, usually a male, the rostrum and parts of the under surface are blackish.

***Aolles basalis*, n. sp.**

♂. Black or blackish, some parts reddish. Densely clothed with variegated scales.

Rostrum about the length of prothorax; with fine ridges alternated with partially concealed punctures on basal two-thirds, apical third with smaller but more sharply defined ones. Prothorax and elytra with outlines, punctures, and granules as on most species of the genus. Length, 3.3-5 mm.

♀. Differs in having the rostrum slightly longer and thinner, with less defined ridges and smaller punctures.

South Australia: Ooldea (A. M. Lea).

A beautiful species, in appearance approaching some specimens of *A. orbiculatus*, but with snowy-white scales individually larger and more rounded (much as those in the striae of *A. rubiginosus*), they are dense at the base of pronotum and rusty-red on the rest of its surface, the two colours of varying extent and irregularly conjoined, with a few sooty scales scattered about; on the base of elytra (but not on the scutellum, which appears as a black spot), on the apical third, and irregularly on the sides the scales are white, elsewhere, except for a

few scattered white ones, they are sooty; on the under surface and legs they are white, becoming stramineous on the sides of sterna. Of the five specimens taken, two have the rostrum black, two have it red, and the other has it dark reddish-brown; the antennae in all are red, except that the apical half of the club is infuscated.

Aolles basipennis, n. sp.

Dark reddish-brown, antennae somewhat paler. Densely clothed with stramineous, sooty, and white scales.

Rostrum rather wide and straight, slightly longer than prothorax; with dense punctures, sharply defined in front, larger and more confluent posteriorly; with feeble, irregular basal ridges. Prothorax and elytra with outlines, punctures, and granules as on most species of the genus. Length, 4 mm.

Queensland: Bowen (Aug. Simson). Unique.

The rostral ridges are shorter and less distinct than usual. On *A. sobrius* (about the same size and with somewhat similar elytral clothing, except at the base), the rostral ridges are longer and more conspicuous than usual. In general the species is close to *A. orbiculatus*, except that the marginal fringe of pale scales is absent from the sides and apex of elytra. On the head and pronotum the scales are stramineous, with a few dark ones scattered about; the elytra are clothed with sooty scales, except for a narrow basal strip of stramineous ones, present also on the scutellum, and a few white ones in the striae; on the under surface and legs the scales are white, becoming denser, longer, and stramineous on the sides of the mesosternum and metasternum. The type is probably a female.

Aolles vertebralis, n. sp.

Reddish. Densely clothed with rusty-yellow and sooty scales, becoming whitish and stramineous on under parts.

Rostrum wide, quite straight, and very little longer than prothorax; basal half with feeble ridges, alternated with coarse punctures, apical half with smaller and more sharply defined punctures. Length, 2.5 mm.

South Australia: Gawler (J. Faust). Unique.

On the pronotum the scales are mostly rusty on the sides, with a large median patch on which they are mostly sooty; on the elytra they are sooty except for a narrow sutural vitta of rusty ones. The general outlines are much as on most species of the genus, but the series of punctures on the elytra are, if present, entirely concealed on the type, except near the base; the elytra also appear to have no granules.

Aolles quinquecarinatus, n. sp.

♂. Reddish. Moderately clothed with white and stramineous scales on upper surface, becoming denser and uniformly white on under parts.

Rostrum wide, straight, and the length of prothorax; with five strong ridges, alternated with rows of punctures to apical third, on which the punctures are smaller but more sharply defined. Prothorax at base twice as wide as the median length; densely granulate-punctate. Elytra with outlines continuous with those of prothorax; with rows of large, deep punctures, becoming smaller posteriorly, the interstices multigranulate. Length, 3.5 mm.

Queensland: Bluff (A. M. Lea). Unique.

In general appearance, largely owing to the coarse elytral punctures, like some of the smaller non-fasciculate species of *Haplonyx*, but the funicle is distinctly six-jointed; each claw appears as a thin seta in the marginal fringe of the third tarsal joint, but the claw joints themselves are very inconspicuous. The rostral carinae are unusually well defined. On the upper surface most of the scales are thin and stramineous, or slightly rusty; on the sides of the prothorax they are

mostly white, and form irregular vittae, there is also a thin white line down its middle, continued on to the scutellum.

Aolles albus, n. sp.

Pale reddish-castaneous, head somewhat darker. Densely clothed with white scales.

Rostrum almost straight, the length of prothorax; basal three-fifths with fine ridges, alternated with rows of coarse punctures, apical two-fifths with crowded, sharply defined punctures. Prothorax and elytra with normal outlines, punctures, and granules. Length, 3 mm.

South Australia: Murray Bridge (A. M. Lea). Unique.

The scales are dense on most parts and uniformly white, except that there are a few inconspicuous dark ones on parts of the elytra.

Aolles ferrugineus, n. sp.

Black, most of antennae reddish. Densely clothed with rusty-red scales, on upper surface variegated with whitish and darker ones, on parts of under surface whitish.

Rostrum wide, short and straight, no longer than prothorax; with fine ridges, alternated with rows of coarse, partially concealed punctures on basal two-thirds, elsewhere with smaller crowded punctures. Prothorax and elytra with outlines, punctures, and granules as on most species of the genus. Length, 3.5 mm.

King Island (A. M. Lea). Unique.

In some respects close to *A. variegatus*, but larger, clothing denser, more rusty, and on the sides of the prothorax vittate. From *A. ornatipennis*, which is probably a synonym of *A. nigrirostris*, it differs in the entirely black derm, in its clothing, and its shorter and wider rostrum. Each thin claw joint with its claw does not project beyond the lobes of the third tarsal joint, but is sufficiently distinct when the tarsi are viewed at right angles. Most of the clothing on the upper surface is of a rusty-red colour, variegated with whitish subvittate spots on the sides of the prothorax, and scattered white scales, mostly in the striae, on the elytra, there are but few sooty scales, although they appear to be more numerous than they really are owing to exposures of the derm. On the abdomen, except at the sides of the basal segments, and on the middle of the metasternum, the scales are whitish; on the rest of the under surface, and on the legs, they are not much paler than the rusty ones on the upper surface.

Aolles rostralis, n. sp.

Dark reddish-brown, antennae somewhat paler. Densely clothed with large, soft, stramineous, or pale rusty-yellow scales, becoming paler on under parts; elytra with a broad, dark, sub-basal fascia, and a large spot on each side near apex.

Rostrum slightly curved, comparatively thin, slightly longer than prothorax and scutellum on male, still longer on female; with crowded punctures throughout, and with feeble ridges on basal half. Length, 3.5-3.75 mm.

South Australia: Leigh Creek (Rev. T. Blackburn).

A densely squamose species, with a dark sub-basal fascia on the elytra, and a dark postmedian spot on each side, the latter sharply defined on two specimens, broken up into spots with a faint tendency to become fasciate on two others; the markings, therefore, are somewhat suggestive of those of *A. fasciatus*, but the clothing is much denser, and the rostrum is decidedly longer and thinner. The rostrum is unusually long and thin for the genus, and is also somewhat curved, although not as in *Zoopus*. The general outlines and the punctures and the granules are apparently as on most species of the genus, but the derm is almost everywhere concealed by the clothing.

Aolles multimaculatus, n. sp.

Reddish-brown; antennae, except part of club, paler. Rather densely clothed with whitish or stramineous and sooty scales, irregularly mingled on upper surface, becoming almost uniformly white on under parts.

Rostrum slightly longer than prothorax, gently curved; with crowded punctures, and on basal half feeble ridges. General outlines as on most species of the genus. Length, 2.5-2.75 mm.

Victoria: Sea Lake (J. C. Goudie).

In general appearance like some of the varieties of *A. orbiculatus*, but the rostrum is noticeably curved. On the prothorax the paler scales are in the majority on the sides, but not in the middle; on the elytra the dark scales are most numerous, the white ones forming small irregularly distributed spots, with the tendency to form a feeble postmedian fascia, and a short vitta on each side of the scutellum. The elytral punctures are apparently of moderate size, but they are considerably obscured by the clothing, although the rows are more distinct than on *A. vertebralis*. The notch of the third tarsal joint is sufficiently distinct, but the claw joint and its claw are not evident, at least the claw does not appear as a median seta in the apical fringe.

Aolles intermedius, n. sp.

♂. Black, antennae reddish. Clothed with white, stramineous, and sooty scales on upper surface, snowy-white on under parts.

Rostrum slightly longer than prothorax, slightly wider than each eye, moderately curved; with fine ridges alternated with rows of punctures behind antennae, with comparatively small but sharply defined punctures in front. Prothorax more than twice as wide as long, base not quite twice the width of apex; with crowded and mostly concealed punctures. Elytra with outlines continuous with those of prothorax, base trisinate; with rows of fairly large partially concealed punctures; interstices finely granulate. Length, 2.75-3 mm.

♀. Differs in having the rostrum about one-third longer, thinner, more shining, with smaller punctures and shorter ridges, and antennae inserted in middle of sides of rostrum, instead of two-fifths from apex.

South Australia: Port Lincoln (Rev. T. Blackburn and A. M. Lea).

In general appearance like many specimens of *A. orbiculatus* and *A. basipennis*, but rostrum longer, thinner, and moderately curved. At first glance resembling some varieties of *Zeopus storeoides*, but the rostrum of the female is not much more than half the length of that of the male of that species, and considerably less than half of that of its female; it is, however, decidedly more curved than on any previously described species of *Aolles*. On the pronotum the stramineous scales cover most of the sides, the sooty ones most of the middle; on the elytra the stramineous ones cover a narrow part of the base (including the scutellum) and the sides, elsewhere, except for some scattered white scales, the clothing is sooty. The third tarsal joint appears to be rather widely notched, but this is due to the absence of fringing setae from its middle; the claw joint is concealed, but its claw appears as a finer seta than any of those in the apical fringe. The female from Port Lincoln has parts of the derm obscurely reddish, but probably the derm varies as in most species of the subfamily. A second female from Monarto is slightly larger, with paler scales of upper surface almost white, and in sharper contrast with the black ones, its rostrum is slightly longer, although much shorter than on the male of *Z. storeoides*.

Aolles intermixtus, n. sp.

Reddish-brown. Densely clothed with variegated scales, becoming almost uniformly white on under parts.

Rostrum wide, straight, and slightly longer than prothorax; with fine ridges, alternated with rows of punctures on basal two-thirds, elsewhere with crowded punctures. Prothorax more than twice as wide as long, sides oblique to apex, which is about half the width of base; with crowded, but normally concealed punctures. Elytra with outlines continuous with those of prothorax; with rows of large, partially concealed punctures, interstices with fine, normally concealed granules. Claw joints thin and distinct. Length, 4 mm.

North-Western Australia: Fortescue River (W. D. Dodd). Unique.

A fairly large species, with white, rusty-yellow, and sooty scales on the elytra, irregularly distributed, but to the naked eye appearing in feeble zones or fasciae; there is a fairly wide sooty zone near the base, and a smaller one beyond the middle, and the scutellum appears as a round dark spot; on the pronotum there are only whitish and rusty-yellow scales, also irregularly mingled. The base of the elytra, except for the incurvature at the scutellum, is almost straight, instead of distinctly trisinate.

On this and on the three following species, the thin claw joint with a single claw projects well beyond the lobes of the third joint of each tarsus, and the general appearance is as of non-fasciculate species of *Haplonyx*, but as the funicle is certainly six-jointed (all have been examined under the microscope) they have been referred to *Aolles*.

***Aolles latirostris*, n. sp.**

Reddish. Densely clothed with variegated scales on upper surface, becoming uniformly white on under parts.

Rostrum wide, straight, and the length of prothorax, sides gently incurved to middle; with fine ridges, alternated with rows of squamiferous punctures to insertion of antennae, in front with dense, naked punctures. Prothorax and elytra with outlines, punctures, and granules as on most species of the genus. Claw joints distinct. Length, 2.75 mm.

Queensland: Longreach (A. M. Lea). Unique.

In general appearance like the preceding species on a reduced scale, and with the claw joint equally prominent; the clothing is of much the same colours, but is opaque, and less intermingled, with the scales on the scutellum white. On the pronotum the scales are mostly dark stramineous, with a few white spots on the sides, and white ones scattered singly elsewhere; on the elytra most of them are of a rusty-yellow, with an irregular dark fascia at the basal third, and short, white vittae forming feeble fasciae at the base, beyond the middle, and near the apex.

***Aolles parvus*, n. sp.**

Reddish. Densely clothed with variegated scales, becoming white on under parts.

Rostrum wide, straight, and about the length of prothorax; with fine ridges, alternated with rows of squamiferous punctures on basal three-fifths, elsewhere with crowded, naked punctures. Prothorax and elytra with outlines, punctures, and granules as on most species of the genus. Claw joints distinct. Length, 2.25 mm.

Northern Territory: Roper River (N. B. Tindale). Unique.

Smaller than the preceding species, and with about half of the elytral scales black. On the upper surface the scales are rusty-yellow, white and sooty, on the pronotum they are mostly rusty, with white vittae on the sides, and two small white submedian spots, on the base there are three small feeble dark spots. On the elytra there is a wide, irregular, black fascia, extending from near the base to near the middle; beyond the middle the black, white, and rusty scales are irregularly mingled, about the base they are rusty, with a few white ones. Directly from behind rows of snowy scales may be seen in the striae.

Aolles inconspicuus, n. sp.

Black, some parts obscurely diluted with red, antennae reddish. Densely clothed with somewhat rusty and sooty scales, becoming white on under parts.

Rostrum wide, straight, and the length of prothorax; basal three-fifths with fine ridges, alternated with rows of squamiferous punctures, elsewhere with crowded naked punctures. Prothorax and elytra with outlines, punctures, and granules as on most species of the genus. Claw joints distinct. Length, 2.25 mm.

Queensland: Brisbane (H. J. Carter). Unique.

The size of the preceding species, but head and rostrum black, the elytral clothing of two colours only, and most of the discal scales of the pronotum sooty. The clothing is as on many specimens of *A. orbiculatus*, but each claw joint projects well beyond the lobes of the third. On the pronotum the paler scales form two oblique vittae on each side, with a few scattered singly on the disc; on the elytra they rather narrowly clothe the base (including the scutellum), the margins on the basal half, and form small irregularly distributed spots elsewhere.

Aonychus picatus, n. sp.

♂. Black. Densely clothed with black and white scales on upper surface, white on lower surface and legs.

Rostrum rather thin, moderately curved, the length of prothorax; with some strong punctures about base. Prothorax moderately transverse, sides strongly rounded, base strongly bisinuate and about twice the width of apex; punctures normally concealed. Elytra cordate, distinctly wider than prothorax; with series of fairly large, concealed punctures. Two basal segments of abdomen with a shallow median depression, clothed with setae instead of scales. Length, 4.5-5.5 mm.

♀. Differs in having the rostrum slightly longer, with sparser punctures about base, and two basal segments of abdomen strongly and evenly convex.

Western Australia: Cunderdin, in September and October.

A multimaculate species with deep black and snowy-white scales. On the head they are mostly white, with a round black patch in front; on the pronotum the white scales form a median line on the basal half, and two large spots on each side, but the spots are connected with the white mass below; the scutellum appears as a white spot; on the elytra the white spots are numerous, and so placed as to appear irregularly fasciate, and to enclose round or subquadrate black spots. On *A. luctuosus* the black scales of the elytra are more conspicuous about the suture than elsewhere, and the white ones are somewhat longitudinally arranged; on the present species they could be regarded as forming very irregular transverse or zigzag fasciae. There are other specimens in the Western Australian Museum, No. 8278.

Aonychus barbatus, n. sp.

♂. Blackish-brown, parts of antennae paler. Densely clothed with sooty-brown and white scales on upper surface, entirely white on under surface and legs. Rostrum with an apical fringe on each side of about eight, rather long, yellowish bristles.

Rostrum thin, strongly curved, sides slightly incurved between antennae and apex. Prothorax and elytra with outlines and sculpture as on the preceding species, except that the series of punctures on the elytra are less concealed by the clothing. Length, 6 mm.

Northern Territory: Bathurst Island, in October (G. F. Hill). Unique.

Readily distinguished from all other species of the genus by the bearded rostrum, which, however, is probably confined to the male. The dark scales clothe the front of the head, median part of pronotum, except for remnants of a

white cross, and most of the elytra, on the latter the white ones form short vittae, and interrupted fasciae, so placed that there appear to be two large, quadrangular sutural spots on the basal half, and a small square spot at the basal third on the fifth interstice; on the apical slope the white spots are small and numerous. There is a slight flattening in the middle of the two basal segments of abdomen, but they are without the usual setose depression of the males of the genus.

Aonychus lituratus, n. sp.

♂. Black, parts of antennae obscurely reddish. Densely clothed with black and white scales on upper surface, white on under surface and legs.

Rostrum rather long and thin, rather strongly curved; with a short ridge near base, on each side of which the punctures are dense and rather coarse, elsewhere with fine punctures. Prothorax slightly transverse, base strongly bisinuate and about twice the width of apex; with crowded, concealed punctures. Elytra cordate; with regular rows of large, partially concealed punctures. Two basal segments of abdomen with a shallow median depression, clothed with scales instead of setae. Length, 6 mm.

Queensland: Claudie River (J. A. Kershaw). Type (unique), in National Museum.

In general appearance fairly close to the preceding species, but the dark scales blacker, the white ones differently disposed, and the rostrum not bearded. The black scales form a round spot on the front of the head, clothe the median part of pronotum, and most of the elytra; on the pronotum the white ones on the sides are advanced in a zigzag manner on the disc, there are also two minute median white spots and a medio-basal one; on the elytra the white spots are small and irregularly distributed, except that some are united to form an irregular T or short broad Y, on and near the suture about the summit of the apical slope.

MICRAONYCHUS.

In the original diagnosis of this genus it was noted that the funicle should probably be considered as seven-jointed rather than six-jointed. I have recently re-examined some of the types and many fresh specimens (including *M. maculatus*, *sordidus*, *decipiens*, and *nigrirostris*), as well as several new species, and now consider that the funicle should be regarded as really six-jointed, as it certainly appears to be under a fairly high power; the eighth joint of the antennae is usually closely applied to the club, and apparently forms part of it, as on *Misophrice*, although it is usually without the fine sensitised pubescence of the club, its derm generally has the appearance of the funicle, rather than of the club. In *M. maculatus*, however, it is slightly narrower than the sixth joint of the funicle, and distinctly narrower than the following joint, and, although it appears to belong to the club, its clothing is different.

MICRAONYCHUS NIGRIROSTRIS, L.ca.

Three specimens evidently belonging to this species, from Queensland (National Park and Mount Tambourine), are smaller than usual, on one of them many of the scales are of a brilliant green, on another many are of a coppery-red, on the third many are coppery, and others green. The species is distinct by its black rostrum.

Micraonychus illotus, n. sp.

Dull brownish-red; head and metasternum darker; club, most of funicle, and tarsi black. Moderately clothed with muddy-grey scales, becoming paler on under surface.

Rostrum slightly longer than prothorax, thin, curved, shining, and with rows of distinct punctures on basal half, smaller scattered ones elsewhere. Funicle distinctly six-jointed. Prothorax almost as long as wide, base strongly bisinuate and almost twice the width of apex; with crowded, partially concealed punctures. Elytra oblong-cordate, sides gently dilated to near middle; with rows of large, partially obscured punctures, alternate interstices feebly elevated. Pectoral canal deep, ending abruptly in middle of metasternum. Length, 3.5 mm.

South Australia: Lucindale (B. A. Feuerheerdt).

A large, dingy species; at first glance the type looks like a large, dirty specimen of *M. cinerascens*, but its pectoral canal is shorter; on that species it extends to the abdomen.

***Micraonychus interruptus*, n. sp.**

Dull reddish-brown, rostrum and scape paler, rest of antennae and tarsi black. Densely clothed with silvery-white scales, in parts obscured by muddy-grey ones.

Rostrum thin, the length of prothorax, moderately curved; with rows of punctures on basal half, sparse and small elsewhere. Funicle six-jointed. Prothorax almost as long as wide; punctures crowded but normally concealed. Elytra not much wider than prothorax, parallel-sided to beyond middle; with regular rows of large punctures, appearing much smaller through clothing. Pectoral canal deep, ending abruptly before middle of metasternum. Length, 2.5-2.75 mm.

Tasmania: Launceston (F. M. Littler and Aug. Simson).

Most of the derm is normally concealed. On specimens in good condition the white scales form a median line on the pronotum and are dense on the sides; on the elytra they are dense, leaving parts of the suture, fifth and seventh interstices bare (and consequently appearing vittate), a bare antemedian part of the seventh is directed obliquely backwards, to join in with a bare postmedian patch on the fifth. Rubbed or dirty specimens are difficult to distinguish from rubbed or dirty ones of *M. decipiens*.

***Micraonychus coelosternus*, n. sp.**

Black; elytra, parts of under surface, femora, tibiae, apical half of rostrum (the base obscure), and scape more or less obscurely reddish. Moderately clothed with whitish scales, with a slight bluish tinge.

Rostrum thin, curved, shining, the length of prothorax, and with rows of fine punctures. Funicle six-jointed. Prothorax about as long as wide, sides rounded and somewhat narrowed to apex; with crowded punctures. Elytra oblong-cordate, but rather narrow; with rows of large, partially obscured punctures. Pectoral canal deep and fairly wide to middle of metasternum, thence connected with abdomen by a narrow groove. Two basal segments of abdomen with a large, shallow depression. Length, 2 mm.

New South Wales: Upper Williams River (A. M. Lea). Unique.

Evidently allied to *M. rufimanus*, but without the large soft scales characteristic of that species, and with a longer pectoral canal, which is narrowly connected with the abdomen. The partly red rostrum distinguishes from *M. nigrirostris*. The clothing is not very dense, and the individual scales are seldom distinct, except on the under surface, where some of them have a slight metallic gloss. The abdominal depression is probably a masculine feature.

GEOCHUS, Broun, Man. N. Z'land Col., iv., p. 931.

Two species of this genus were first referred to *Geophilus*, but finding that name had already been used, Broun proposed the name *Geochus*.⁽⁷⁾ The species

(7) Broun, N. Z'land Jour. Sci., i, 1882, p. 128.

are remarkable for their flattened, broad forms, widely separated front coxae, and three-jointed tarsi. The genus was originally placed in the Diabathrariides, but in the systematic index to the Manual at the end of the Cylindrorhinides. It really appears to be an aberrant one of the Cryptorhynchides. Twenty-six species are known from New Zealand, and one can now be added from Lord Howe Island, taken from fallen leaves, as were most of the others.

***Geochus howensis*, n. sp.**

Black; antennae, except club, reddish. In parts sparsely and obscurely clothed.

Head small, with dense punctures. Eyes small, lateral, with coarse facets. Rostrum short, dilated to near apex, with three longitudinal ridges. Antennae inserted near apex of rostrum, scape dilated at apex; funicle seven-jointed, first joint subglobular. Prothorax transverse, flat, base evenly curved and twice the width of apex; with crowded, deep punctures of moderate size, and with a feeble median ridge. Elytra closely applied to prothorax, sides dilated to basal third and then oblique to apex; with rows of large, rough punctures, wider than interstices, these somewhat irregular. Femora rather stout, edentate; tibiae with a small terminal hook, tarsi short, apparently three-jointed. Length, 1.5-2.0 mm.

Lord Howe Island, eleven specimens from fallen leaves (A. M. Lea and wife).

Differs from *G. inaequalis* and *G. marginalis*, New Zealand species, in the elytra. The legs, tip of abdomen, and sometimes parts of the elytra, are obscurely diluted with red. Seen directly from above more than half of the elytra appears as a large triangle, owing to the sides being obliquely cut off from the basal third, the interstices are in parts uneven, although hardly tuberculate, the irregularity being most noticeable at the basal third. The distance between the front coxae is more than the width of a coxa. One of the specimens has the elytra more strongly sculptured than the others, the second interstice on each elytron is flattened except for a sudden elevation at the basal third, the third is elevated to the basal third, then suddenly interrupted, and then with two elevations, the fifth is conspicuously elevated from the base to beyond the middle, and the sixth is also elevated in part.

***Achelocis*, n. g.**

Head small, round. Eyes small, lateral, with coarse facets. Rostrum rather long, thin, and moderately curved; scrobes deep and oblique in front, then shallower on under surface almost to eyes. Antennae rather thin; scape almost as long as funicle and club combined; funicle seven-jointed; club moderately long. Prothorax transverse, base strongly and evenly rounded, sides strongly rounded. Scutellum minute. Elytra slightly wider than long, sides strongly rounded, surface uneven. Mesosternum semicircularly emarginate at apex, without a median groove. Metasternum very short, episterna not apparent. Abdomen rather small, first segment as long as second and third combined, third and fourth combined the length of second and slightly longer than fifth. Legs moderately long; front coxae almost touching, middle ones moderately, the hind ones widely separated; femora rather stout, neither grooved nor dentate; tibiae slightly bisinuate on lower surface, apical hook small; tarsi three-jointed. Coarsely sculptured and sparsely clothed.

The type is a singular insect, for which at present I am unable to suggest a subfamily, although it is probably near the Cryptorhynchides. In its general appearance it has somewhat the look of the rough, granulate species of *Tentegia*, of that subfamily, and its general outlines, rostrum, and abdomen are much as those of *Cycloporopterus*, but the total absence of a pectoral canal should forbid its being referred to the Cryptorhynchides. The upper surface of the third tarsal

joint appears to be almost evenly rounded, and under the microscope I cannot see even the rudiment of a claw joint; the under surface is densely padded and feebly notched in the middle.

***Achelocis rudis*, n. sp.**

Black; antennae, tibial hooks, tarsi, and parts of clytra reddish. Sparsely clothed with pale setae.

Head with coarse punctures and a small median fovea. Rostrum slightly longer than prothorax, somewhat thickened, and with coarse, crowded punctures about base, elsewhere smaller and more or less linear in arrangement. Funicle with two basal joints moderately long and subequal, their combined length slightly less than that of the five following ones. Prothorax with numerous fine, transverse, irregular ridges, in front of which are coarse punctures, but with coarse punctures only on sides. Elytra strongly and almost evenly rounded; with shallow striae, containing large, irregularly spaced punctures, the interstices with irregular series of small, round, shining granules. Sterna and two basal segments of abdomen with coarse, irregular punctures. Length, 3.5 mm.

Queensland: Cairns (Dr. E. W. Ferguson). Unique.

A briefly ovate, strongly convex, rough-looking species. In certain lights there appear to be three obscurely reddish irregular fasciae on the clytra, one at the base, one near and one slightly beyond the middle, and irregular patches elsewhere; the elytral granules are in single series, but all more or less irregularly interrupted.
